

Early Stakeholder Outreach
Oil & Gas Waste
Draft Conceptual Rules

Aaron Shear
 June 12, 2015

Tri-Agency Regulatory Oversight



House Bill 59

House Bill 59 was passed by the 130th General Assembly on July 1, 2013. This bill amended several sections of Ohio Law to provide for greater oversight and coordination between the Ohio Department of Health (ODH), Ohio Department of Natural Resources (ODNR) and the Ohio Environmental Protection Agency (Ohio EPA) in ensuring the safe management of oil and gas waste.



ODNR

Division of Oil & Gas Resources Management



ORC 1509.02

“The division has sole and exclusive authority to regulate the permitting, location, and spacing of oil and gas wells and production operations within the state..”

ODNR

Division of Oil & Gas Resources Management

Shale Well Drilling & Permitting

Activity

General Info

Horizontal Shale Production

Seismic Restrictions

Chemical Info

Shale Development & Activity

Marcellus and Utica/Point Pleasant shale activity spreadsheets are posted weekly, typically Tuesday afternoon, by the Division of Oil and Gas Resources Management.

Marcellus Shale

Weekly Permitting Activity

↓ for week ending 5/30/15 [pdf 61Kb]

Rig Count: 0

Cumulative Permitting Activity

↓ through 5/30/15 [pdf 63Kb] [xls 56Kb]

Horizontal Permits: 44

Horizontal Wells Drilled: 29

Utica/Point Pleasant Shale

Weekly Permitting Activity

↓ for week ending 5/30/15 [pdf 72Kb]

Rig Count: 26

Cumulative Permitting Activity

↓ through 5/30/15 [pdf 329Kb] [xls 397Kb]

Horizontal Permits: 1,926

Horizontal Wells Drilled: 1,497

↓ Horizontal Marcellus Well Activity in Ohio [pdf 277Kb]

Updated 6/8/2015

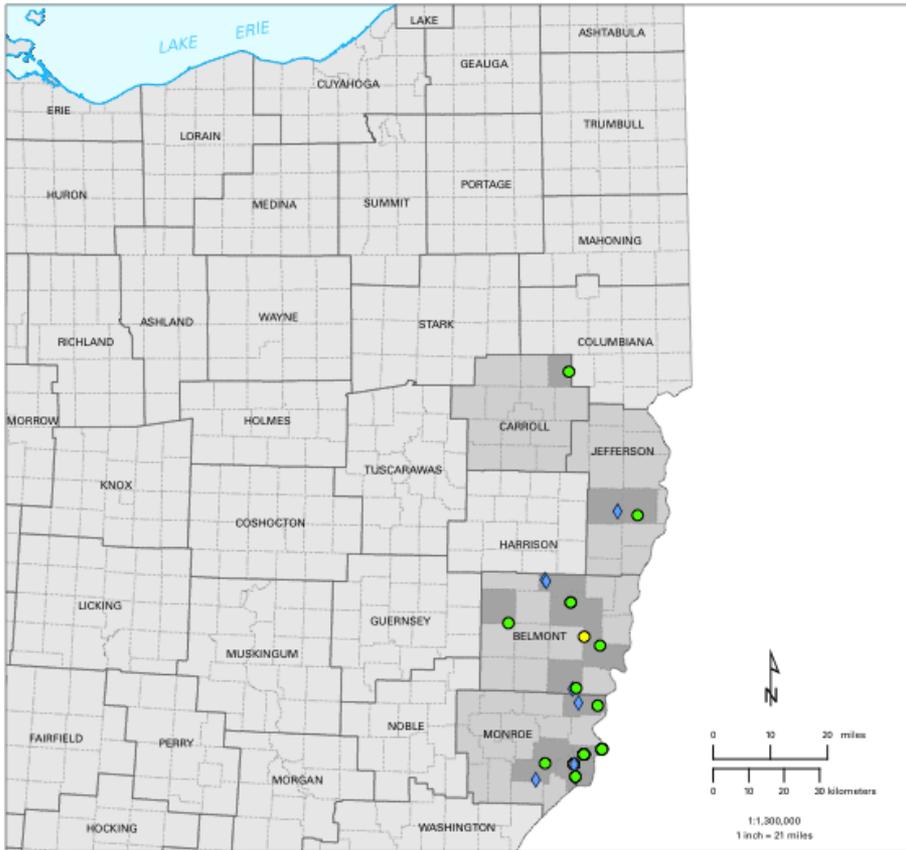
↓ Horizontal Utica/Pt. Pleasant Well Activity in Ohio [pdf 330Kb]

Updated 6/8/2015

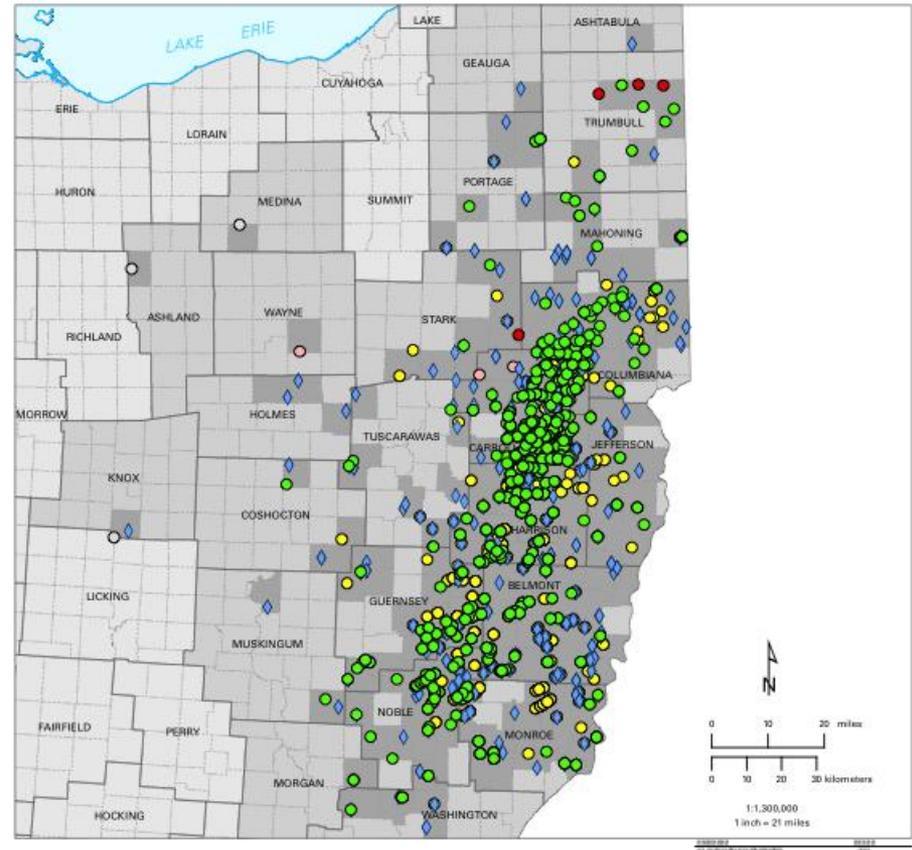


Horizontal Well Activity in the Marcellus and Utica / Point Pleasant

OHIO DEPARTMENT OF NATURAL RESOURCES
HORIZONTAL MARCELLUS WELL ACTIVITY IN OHIO



OHIO DEPARTMENT OF NATURAL RESOURCES
HORIZONTAL UTICA - PT PLEASANT WELL ACTIVITY IN OHIO



EXPLANATION

Horizontal well status as of 4/4/2015

- ◆ PERMITTED-(Permitted; Not Drilled; Canceled) (15)
- DRILLED-(Drilling; Well Drilled) (15)
- PRODUCING-(Producing; Plugged Back) (13)
- INACTIVE-(Drilled Inactive; Shut in) (1)
- Lost Hole or Final Restoration (0)
- Dry and Abandoned (0)
- Plugged and Abandoned (0)

Well Status	Count
PERMITTED-(Permitted; Not Drilled; Canceled)	15
DRILLED-(Drilling; Well Drilled)	15
PRODUCING-(Producing; Plugged Back)	13
INACTIVE-(Drilled Inactive; Shut in)	1
Lost Hole or Final Restoration	0
Dry and Abandoned	0
Plugged and Abandoned	0



EXPLANATION

Horizontal well status as of 4/4/2015

- ◆ PERMITTED-(Permitted; Not Drilled; Canceled) (448)
- DRILLED-(Drilling; Well Drilled) (544)
- PRODUCING-(Producing; Plugged Back) (839)
- INACTIVE-(Drilled Inactive; Shut in) (10)
- Lost Hole or Final Restoration (24)
- Dry and Abandoned (3)
- Plugged and Abandoned (0)

Well Status	Count
PERMITTED-(Permitted; Not Drilled; Canceled)	448
DRILLED-(Drilling; Well Drilled)	544
PRODUCING-(Producing; Plugged Back)	839
INACTIVE-(Drilled Inactive; Shut in)	10
Lost Hole or Final Restoration	24
Dry and Abandoned	3
Plugged and Abandoned	0



Well permit information from the ODNR Division of Oil and Gas Resources Management
Recommended citation:
Ohio Department of Natural Resources, 2015, Horizontal Marcellus Well Activity in Ohio: Columbus, scale 1:1,300,000, revised 4/6/2015.



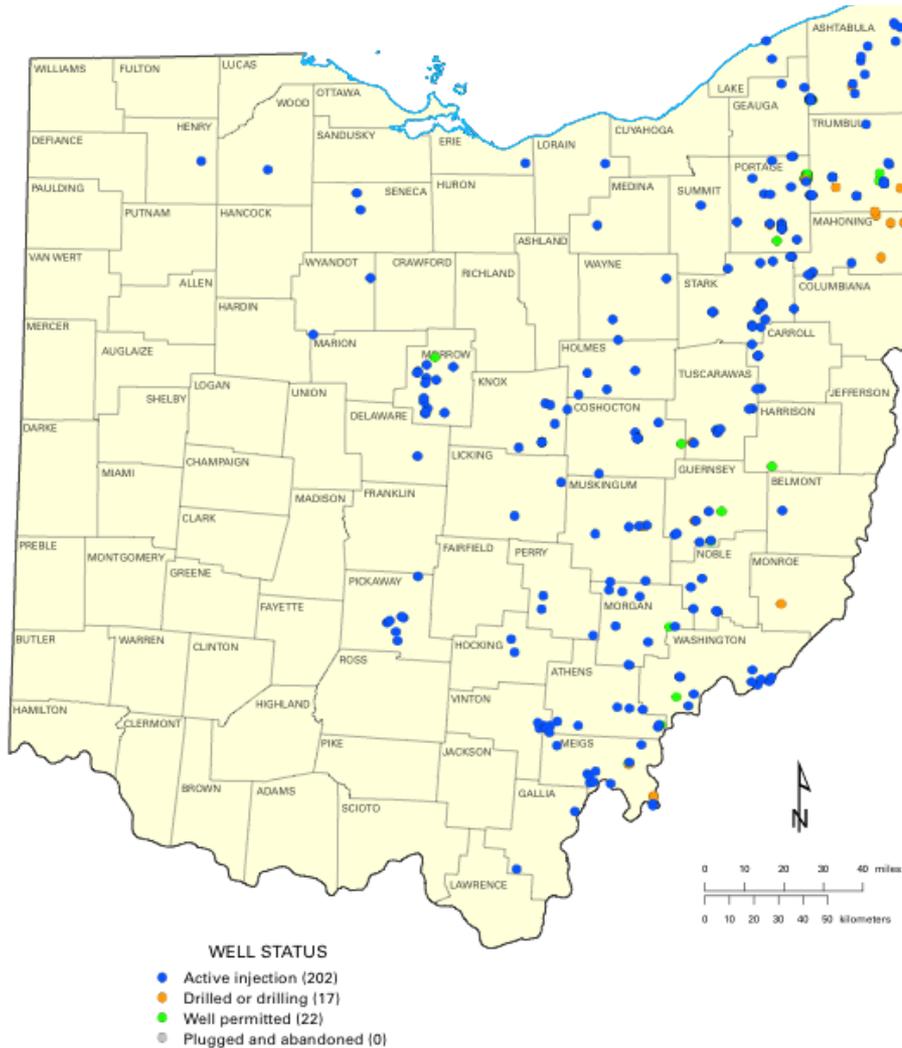
Well permit information from the ODNR Division of Oil and Gas Resources Management
Recommended citation:
Ohio Department of Natural Resources, 2015, Horizontal Utica-Point Pleasant Well Activity in Ohio: Columbus, scale 1:1,300,000, revised 4/6/2015.

Waste Substance Facilities

Beginning on January 1, 2014, “no person shall store, recycle, treat, process, or dispose of in this state brine or other waste substances associated with the exploration, development, well stimulation, production operations, or plugging of oil and gas resources without an order or permit issued under this section or section 1509.06 or 1509.21 of the Revised Code or rules adopted under any of those sections.”



Class II Underground Injection Control Program



July 2014 UIC Letter

Solid wastes such as tank bottoms, used filters, used filter socks, used drilling mud and drilling mud solids, used frac sand, and pipe scale generated at a Class II saltwater injection well facility may be TENORM.... If the solid waste is TENORM, the solid waste must be

- (1) disposed of in accordance with ODH and Ohio EPA requirements or
- (2) transported out of state for lawful disposal.



ODH

Bureau of Environmental Health & Radiation Protection

OHIO DEPARTMENT OF HEALTH
NORM/TENORM
INFORMATION SHEET



Ohio Administrative Code
Chapter 3701:1-43 TENORM



Ohio Revised Code 3748.01 –
Radiation control program definitions.

(X) "**Technologically enhanced naturally occurring radioactive material**" means naturally occurring radioactive material with radionuclide concentrations that are increased by or as a result of past or present human activities.

"Technologically enhanced naturally occurring radioactive material" does not include drill cuttings, natural background radiation, byproduct material, or source material.

Ohio Revised Code 3748.01 – Radiation control program definitions.

(Y) "**Drill cuttings**" means the soil, rock fragments, and pulverized material that are removed from a borehole and that may include a de minimus amount of fluid that results from a drilling process.



November 17, 2014

Subject: Landfill acceptance and disposal of waste substances from horizontal wells - update

Dear Facility Operator:

As oil and gas drilling activity in the Utica/Point Pleasant and Marcellus Shale formations continues to develop, licensed municipal solid waste landfills in Ohio and surrounding states should expect to see increased volumes of incoming waste substances generated from the drilling process, including drill cuttings, tank bottoms, and used frac sands. In addition, landfill operators may see increased volumes of filter media, including filter socks from processing and treatment activities of fluids at waste substance facilities¹, or from underground injection control wells used for the disposal of brine.

House Bill 59 strengthened Ohio laws administered by the Ohio Department of Natural Resources (ODNR), Ohio Department of Health (ODH), and Ohio Environmental Protection Agency (Ohio EPA) that ensure oil and gas waste substances are properly managed and disposed. Our agencies wanted to take an opportunity to highlight some important impacts to Ohio landfills resulting from House Bill 59 and shale development.

Stabilization of Waste Substances

Since January 1, 2014, ODNR regulates the storage, recycling, treatment (i.e. stabilization), and processing of waste substances associated with a horizontal well², and Ohio law provides for the disposal of waste substances other than brine at Ohio solid waste landfills. Due to the liquid content in waste substances, these materials may require stabilization or other processing prior to landfill disposal. Generally, waste substances passing the paint-filter test are solid wastes regulated by Ohio EPA when disposed in accordance with ORC Chapter 3734; however, waste substances also include materials that do not pass the paint-filter test or do not meet the definition of solid waste.

¹ Section 1509.022(B)(2)(a) states, in part, that "No person shall store, recycle, treat, process, or dispose of in this state brine or other waste substances associated with the exploration, development, well stimulation, production operations, or plugging of oil and gas resources without an order or permit issued under this section or section 1509.06 or 1509.21 of the Revised Code". Landfill acceptance of waste that contains brine and requires stabilization is prohibited, unless authorization is obtained pursuant to ORC Section 1509.22.

² See ORC Section 1509.022(B)(2)(a).

ODH – Guidance Documents

- Acceptable TENORM Analytical Methods for Radium-226 and Radium-228
- Guidance for Sampling Waste Containing TENORM

OHIO DEPARTMENT OF HEALTH BUREAU OF RADIATION PROTECTION	Date	Page
	08/25/2014	1 of 5
Title		
Acceptable TENORM Analytical Methods for Radium-226 and Radium-228		

1. Purpose

The Ohio Department of Health (ODH) has established this list of acceptable analytical methods for assaying Radium-226 (Ra-226) and Radium-228 (Ra-228) to assist disposal site operators in verifying that:

- All waste containing Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) has been accurately assayed for Ra-226 / Ra-228 using an ODH acceptable analytical method; and
- The reported "combined Ra-226 / Ra-228" concentration for waste being received for disposal, satisfies the exempt TENORM concentration criteria listed in paragraph (A) of rule 3701:1-43-07 of the Ohio Administrative Code, making the waste acceptable for disposal at their facility. Exempt TENORM concentrations are <5 picocuries per gram (<5 pCi/gm) excluding natural background radiation. Natural background is 2 pCi/gm, unless an individual location submits an alternative background concentration request and obtains approval from ODH.
- TENORM loads accepted at solid waste landfills licensed under ORC Chapter 3734 must be accompanied by lab results referencing analytical methods recognized by this protocol.
- A representative composite sample must be obtained from each container used to collect waste defined as TENORM.

¹ Note: Taking one sample for a production operation or geographic region is not acceptable.

2. Recognized Methods

ODH recognizes radium analytical methods in USEPA's publication SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Chapter 10, published February 2007 revision 3*.
<http://www.epa.gov/waste/hazard/testmethods/sw846/index.htm>

ODH recognizes the radium analytical methods published in the U.S. Department of Energy's document, *Compendium of EPA-Approved Analytical Methods For Measuring Radionuclides In Drinking Water*, published in June of 1998.
<http://www.orau.org/ptp/PTP%20Library/library/DOE/Misc/radmeth3.pdf>

Table 1 – ODH acceptable analytical methods for Ra-226. This Table includes all recognized proposed or modified methods.

Table 2 – ODH acceptable analytical methods for Ra-228. This Table includes all recognized proposed or modified methods.

Table 3 – ODH approved methods for radium. This Table includes all methods that have been approved by the Director of Health.

OHIO DEPARTMENT OF HEALTH BUREAU OF RADIATION PROTECTION	Date	Page
	08/28/2014	1 of 5
Title		
Guidance for Sampling Waste Containing Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)		

1. Purpose

The Ohio Department of Health (ODH) has developed this guidance document for sampling waste containing Technologically Enhanced Naturally Occurring Radioactive Material (TENORM). A representative sample needs to be collected and used to characterize whether the waste material meets Ohio's regulatory exemption criteria for Radium-226 (Ra-226) and Radium-228 (Ra-228), allowing the waste to be disposed of in a solid waste landfill.

2. TENORM Waste Material

It is important to accurately characterize the TENORM waste to:

- Ensure the health and safety of the public and individuals working around the waste material;
- Ensure the waste material is disposed of in accordance with the requirements of Chapter 3701:1-43 of the Ohio Administrative Code;
- Ensure compliance with transportation rules and regulations; and
- Ensure that applicable environmental concerns are addressed.
- Ensure TENORM loads accepted at solid waste landfills licensed under ORC Chapter 3734 must be accompanied by lab results referencing sampling and analytical methods recognized by ODH in order to ensure waste acceptance criteria is met.
- Ensure each conveyance appropriately analyzed and documented to ensure DOT shipping requirements are met including emergency responder adequate knowledge of radiological hazards.

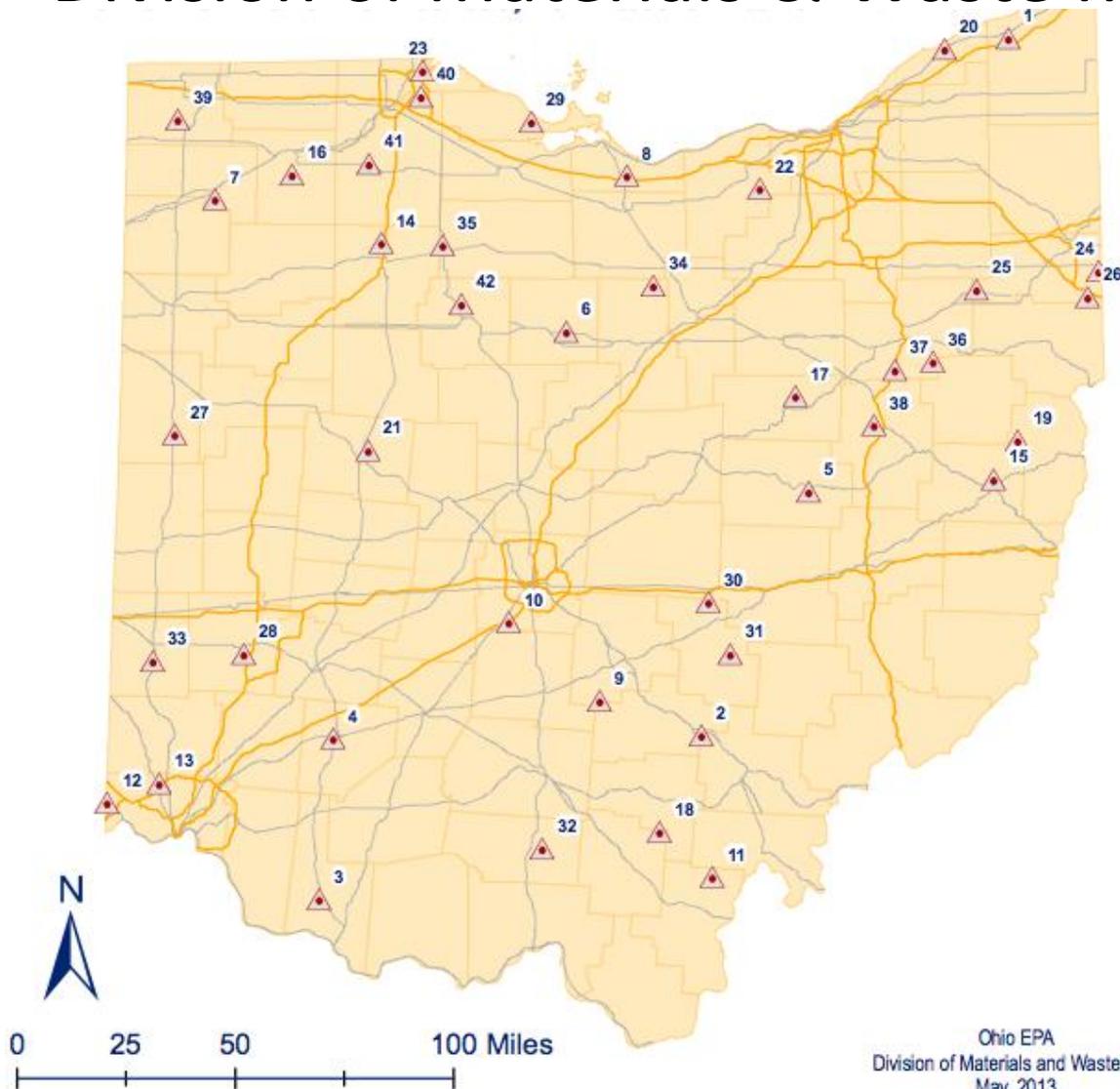
Individuals handling TENORM waste shall:

- Assess their operational process for TENORM waste decisions.
- Develop and implement a sampling and analysis plan that specifies the sampling method and technique to be used to ensure the collection of a representative sample, analysis by a competent analytical laboratory using an ODH approved analytical method for Radium-226 and Ra-228.
- Ensure a representative or composite sample is obtained from each container used to collect waste defined as TENORM. Taking one sample for a production operation or geographic region is not acceptable.

For example, oil and gas industry exploration and production (E&P) waste predominantly will involve large volume storage tanks that contain liquids, semi-solid muds, sediments or moist solids. Because solids and heavy metals typically

Ohio EPA

Division of Materials & Waste Management



Ohio EPA
Division of Materials and Waste Mgt.
May, 2013



Early Stakeholder Outreach – October 2, 2013



FACT SHEET

Division of Materials and Waste Management
October 2, 2013

Early Stakeholder Outreach – House Bill 59 – TENORM Acceptance at Solid Waste Landfills and Transfer Facilities

Ohio EPA prepares early stakeholder outreach fact sheets to ensure stakeholders are brought into the review process as early as possible and to obtain additional input and discussion before development of interested party draft rules.

House Bill 59 was passed by the 130th General Assembly on July 1, 2013. This bill amended several sections of Ohio law to provide for greater oversight and coordination between the Ohio Department of Health (ODH), Ohio Department of Natural Resources (ODNR) and the Ohio Environmental Protection Agency (Ohio EPA) in ensuring the safe management of oil and gas waste. It is anticipated more of this waste will need to be disposed of in Ohio landfills due to increased oil and gas drilling.

Among the amendments to the solid waste statute in Ohio Revised Code (ORC) Chapter 3734, effective Sept. 29, 2013, is the authority for Ohio EPA to promulgate rules regarding the receipt, acceptance, processing, handling, management and disposal of material that contains or is contaminated with radioactive material, including technologically enhanced naturally occurring radioactive materials (TENORM) from oil and gas drilling operations. ORC section 3734.02(P)(4) states:

(4) The director of environmental protection may adopt rules in accordance with Chapter 119 of the Revised Code governing the receipt, acceptance, processing, handling, management, and disposal by solid waste facilities of material that contains or is contaminated with radioactive material, including, without limitation, technologically enhanced naturally occurring radioactive material that contains or is contaminated with radium-226, radium-228, or any combination of radium-226 and radium-228 at concentrations less than five picocuries per gram above natural background. Rules adopted by the director may include at a minimum both of the following:

(a) Requirements in accordance with which the owner or operator of a solid waste facility must monitor leachate and ground water for radium-226, radium-228, and other radionuclides;

(b) Requirements in accordance with which the owner or operator of a solid waste facility must develop procedures to ensure that technologically enhanced naturally occurring radioactive material accepted at the facility neither contains nor is contaminated with radium-226, radium-228, or any combination of radium-226 and radium-228 at concentrations equal to or greater than five picocuries per gram above natural background.

How can I provide input?

The Agency is seeking stakeholder input on the proposed concepts included in this document. When preparing your comments, be sure to:

- explain your views as clearly as possible; describe any assumptions used;
- provide any technical information and/or data used to support your views;
- explain how you arrived at your estimate for potential burdens, benefits or costs;
- provide specific examples to illustrate your views; and
- offer alternatives.

Written comments will be accepted through close of business November 1, 2013. Please submit input to:

Ohio EPA – DMWM
ATTN: Michelle Braun
P.O. Box 1049
Columbus, OH 43216-1049
michelle.braun@epa.ohio.gov

What if I have questions?

Please contact Aaron Shear at (614) 728-5350 or aaron.shear@epa.ohio.gov.

The Director of Ohio EPA is authorized to impose additional rules at Solid Waste Landfills and Transfer Facilities to ensure the safe management of TENORM wastes, including:

- Monitoring leachate (landfills and transfer facilities) and ground water (landfills) for radium- 226 and radium-228 and;
- Establishing and implementing procedures to ensure that TENORM equal to or greater than 5 picocuries per gram above natural background is not accepted at the facility.

Early Stakeholder Outreach (ESO) – May 18, 2015



FACT SHEET

Division of Materials and Waste Management
May 18, 2015

Early Stakeholder Outreach — Oil and Gas Drilling Operation Material Acceptance at Solid Waste Landfills and Transfer Facilities

Ohio EPA prepares early stakeholder outreach fact sheets to ensure stakeholders are brought into the review process as early as possible.

On October 2, 2013, Ohio EPA released an [early stakeholder outreach](#) fact sheet, which sought public comment on proposed rulemaking regarding an approach to regulate the receipt, acceptance, processing, handling, management and transfer or disposal at a solid waste landfill and transfer facility of drilling operation material associated with the construction, operation or plugging of oil and gas wells.

The Agency has reviewed earlier comments received by stakeholders and is now releasing this updated fact sheet and conceptual draft rule language to give stakeholders a better understanding of how the concepts have evolved over the past year.

What is conceptual draft rule language?

The conceptual draft rule language reflects Ohio EPA's vision of how a regulatory program might be carried out in Ohio. Preparing this conceptual draft rule language has helped the Agency identify areas that need additional stakeholder input and discussion. This conceptual draft rule language is draft, has not undergone a full internal Agency review, and is subject to change. The conceptual draft rule language is intended to facilitate continuation of stakeholder discussion.

What are the basic concepts?

The framework contained in the conceptual draft rule language includes applicability, exclusions, definitions, prohibitions, permit-to-install requirements, notification requirements, operational requirements, and a radiation detection program for solid waste landfills and transfer facilities that propose to or accept oil and gas drilling operation material.

The Ohio Department of Health - Bureau of Radiation Protection (ODH-BRP) licenses handlers of radioactive material. A radiation detection program would require licensure by ODH-BRP. Stakeholders are encouraged to review the ODH-BRP draft document titled, "[Solid Waste Disposal Facility Radioactive Material Detection Program](#)," included with the conceptual draft rule language.

What input is the Agency seeking?

The Agency is seeking stakeholder input on the basic concepts, conceptual draft rule language, and ODH-BRP draft document titled, "Solid Waste Disposal Facility Radioactive Material Detection Program." General comments and specific

How can I provide input?

The Agency is seeking stakeholder input on the conceptual rules included in this document. When preparing your comments, be sure to:

- explain your views as clearly as possible;
- describe any assumptions used;
- provide any technical information and/or data used to support your views;
- explain how you arrived at your estimate for potential burdens, benefits or costs;
- provide specific examples to illustrate your views; and
- offer alternatives.

Written comments will be accepted through close of business July 3, 2015. Please submit input to:

Michelle Mountjoy
P.O. Box 1049
Columbus, OH 43216-1049
michelle.mountjoy@epa.ohio.gov

What if I have questions?

Please contact Aaron Shear at 614-728-5350 or aaron.shear@epa.ohio.gov.

Seeking public comment on proposed rulemaking regarding an approach to regulate the receipt, acceptance, processing, handling, management and transfer or disposal at a solid waste landfill and transfer facility of drilling operation material associated with the construction, operation or plugging of oil and gas wells.

ESO - Basic Concepts of Rule Language

- The framework contained in the conceptual draft rule language includes:
 - applicability,
 - exclusions,
 - definitions,
 - prohibitions,
 - permit-to-install requirements,
 - notification requirements,
 - operational requirements,
 - radiation detection program

Draft Ohio EPA TENORM Rule Package

- 3745-515-01 General applicability and exclusions.
 - Applies to Solid Waste Landfills & Transfer Facilities
 - Does not apply to Residual Waste Landfills
 - Does not apply to ODNR authorized facilities, ORC 1509

Draft Ohio EPA TENORM Rule Package

- 3745-515-01 General applicability and exclusions.
 - Applies to Solid Waste Landfills & Transfer Facilities
 - Does not apply to Residual Waste Landfills
 - Does not apply to ODNR authorized facilities, ORC 1509
- 3745-515-02 Definitions.
 - Referenced definitions are primarily statutory; drill cuttings, drilling operation, drilling operation material, natural background, NORM, TENORM, and solid waste.
 - Definition of sanitary landfill facility and solid waste transfer facility consistent with statutory and regulatory definitions.

Draft Ohio EPA TENORM Rule Package

- 3745-515-01 General applicability and exclusions.
 - Applies to Solid Waste Landfills & Transfer Facilities
 - Does not apply to Residual Waste Landfills
 - Does not apply to ODNR authorized facilities, ORC 1509
- 3745-515-02 Definitions.
 - Referenced definitions are primarily statutory; drill cuttings, drilling operation, **drilling operation material**, natural background, NORM, TENORM, and **solid waste**.
 - Definition of sanitary landfill facility and solid waste transfer facility consistent with statutory and regulatory definitions.

Draft Ohio EPA TENORM Rule Package

- 3745-515-05 Prohibitions.
 - Prohibition to accept TENORM ≥ 5 picocuries above background for transfer or disposal
 - Prohibition to accept TENORM ≥ 5 picocuries above background for processing without ODH authorization
 - Prohibition to accept drilling operation material that are containerized bulk liquids or non-containerized liquids or semi-solid material containing free liquids without ODNR authorization
 - Limits stabilization agents to Portland cement and quicklime

Draft Ohio EPA TENORM Rule Package

- 3745-515-10 Permit-to-install.
 - Obtain a solid waste permit-to-install prior to acceptance for processing of TENORM ≥ 5 picocuries above background. Facility must also hold an ODH authorization
 - Still need to obtain a prior permit for any modification as defined in rule 3745-27-01.

Draft Ohio EPA TENORM Rule Package

- 3745-515-10 Permit-to-install.
 - Obtain a solid waste permit-to-install prior to acceptance for processing of TENORM ≥ 5 picocuries above background. Facility must also hold an ODH authorization
 - Still need to obtain a prior permit for any modification as defined in rule 3745-27-01.
- 3745-515-15 Notification
 - Facility currently accepting drilling operation material must provide notification to Ohio EPA within first month of rules becoming effective.
 - Future notification if facility decides to start accepting drilling operation material.

Draft Ohio EPA TENORM Rule Package

- 3745-515-20 Additional operational criteria for a sanitary landfill facility.
 - Implement a radiation detection program as required by rule 3745-515-25.
 - No acceptance of TENORM without first obtaining representative analytical results.
 - Recordkeeping associated with daily log of operations.
 - Annual leachate sampling and analysis to include addition of radium-226 and radium-228.
 - Ground water monitoring parameters to include addition of sampling and analysis of radium-226 and radium-228.

Draft Ohio EPA TENORM Rule Package

- 3745-515-25 Prohibited materials - radiation detection program.
 - Required fixed portal monitors
 - Implement a [Solid Waste Disposal Facility Radioactive Material Detection Program](#) (ODH Guidance)
 - No acceptance of drilling operation material TENORM without first obtaining representative analytical results.
 - Provides for direct disposal of alarmed loads containing radionuclides commonly used in medical procedures
 - Recordkeeping associated with daily log of operations.

Radiological Health Assessment Section



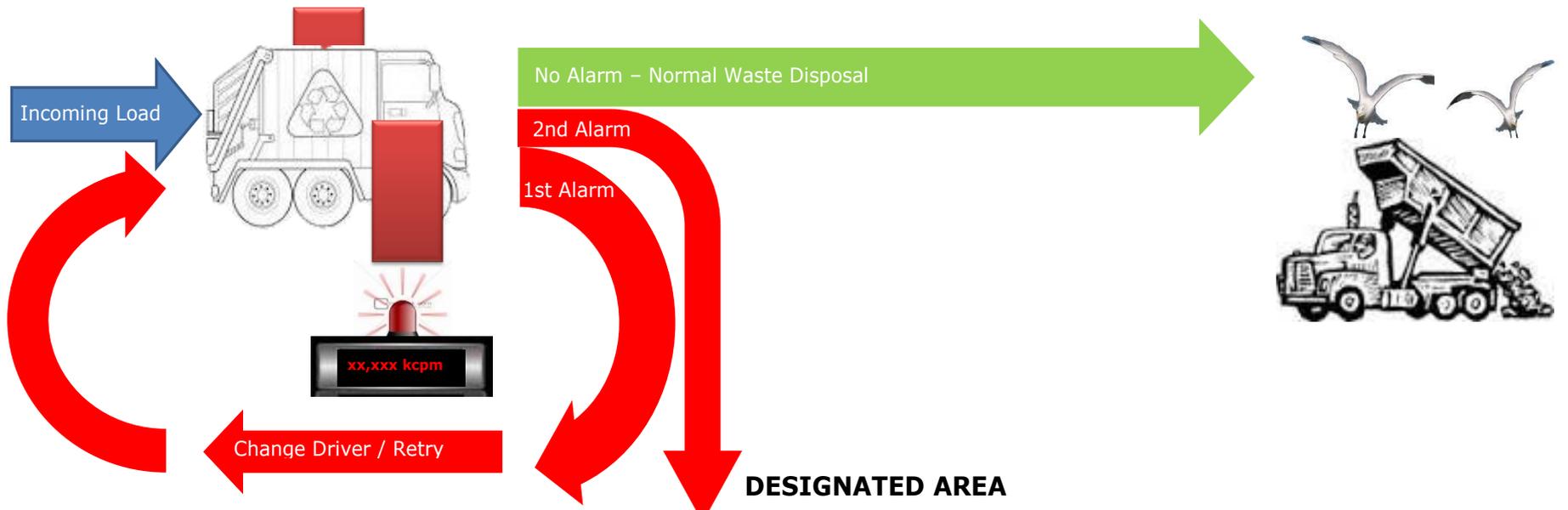
Stephen Helmer, Administrator

Chuck McCracken, Supervisor

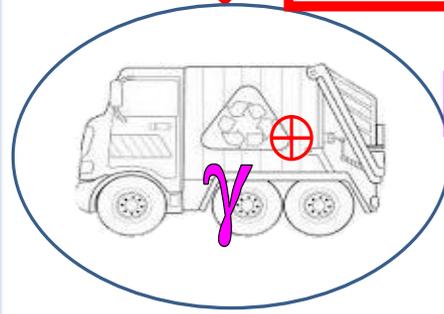
David Lipp, Supervisor

Radioactive Material Detection Program

- Radioactive Material Detection Program Plan
- Facility organization structure
- Radiation detection equipment
- Designated area for investigation
- Procedures, Training, and Experience
- Records
- Reports to the Ohio Department of Health
- Annual review of the RMDP



Immediate call to Ohio Department of Health
 > 50 mrem/hr outside of vehicle or
 > 2 mrem/hr in occupied areas of vehicle



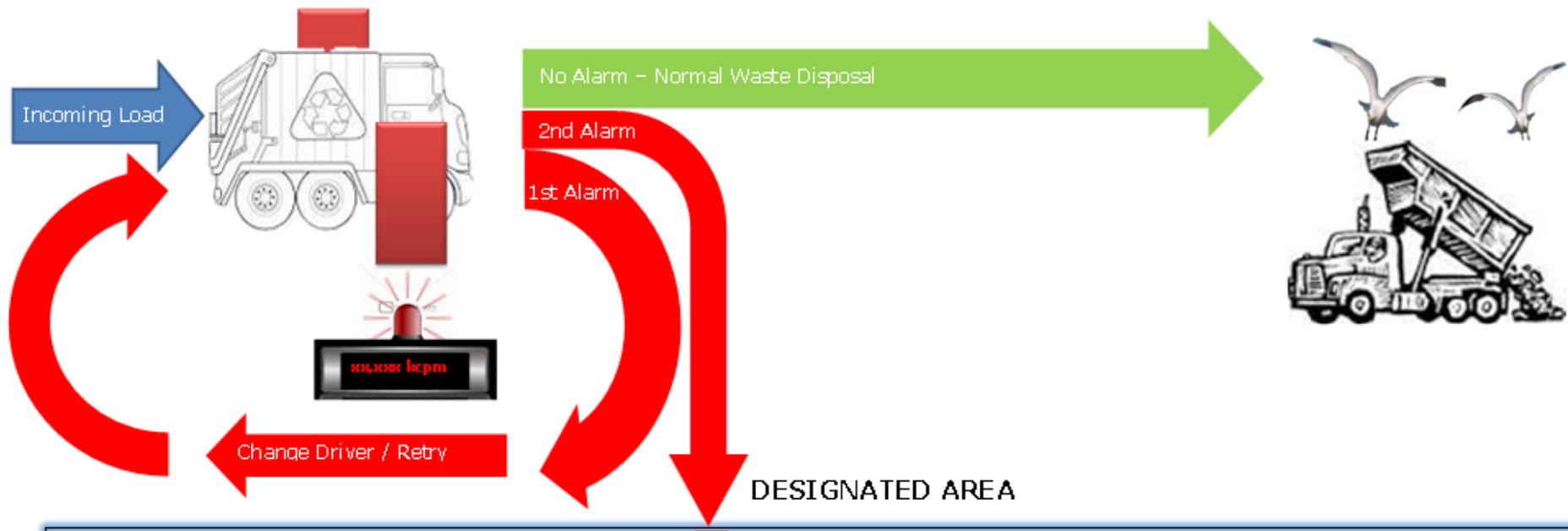
Evaluate for Disposition

Reject Load

- U.S. DOT Exemption from ODH**
- Known Address
 - < 50 mrem/hr outside of vehicle
 - < 2 mrem/hr in occupied areas of vehicle
 - Not unloaded

Residential waste contaminated with a short half-lived radiopharmaceutical from a released medical patient	Radioactive material should be segregated and held for decay-in-storage for 10 half-lives, resurveyed and if background, disposed of as regular trash.
Lost or improperly disposed of licensed radioactive material associated with an academic, research, or industrial use	Immediate call to Ohio Department of Health Move to remote storage location and secure against unauthorized removal until ODH arrives.
Naturally occurring radioactive material (NORM)	Verify NORM and Contact ODH
Technologically enhanced naturally occurring radioactive Material (TENORM)	TENORM to be disposed of I.A.W. Chapter 3701:1-43 of the Ohio Administrative Code
Consumer product, antique, or historical object - contains radioactive material as an integral part	Contact ODH

Rejected Load Returned to Shipper

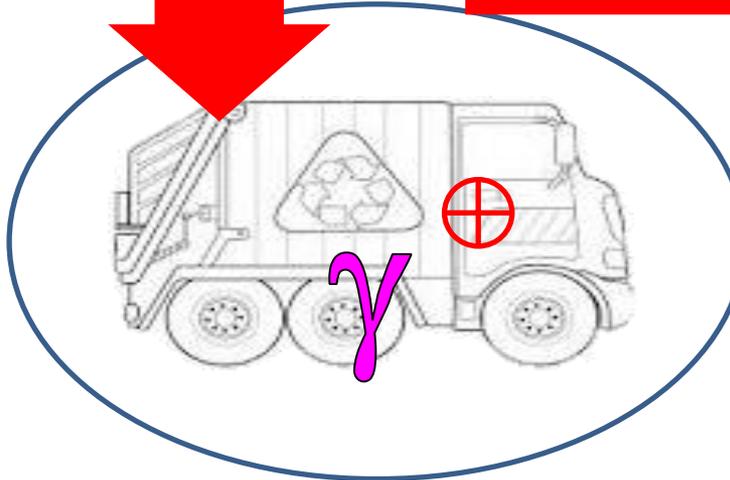


DESIGNATED AREA

Radiation Survey and Gamma Spec to Identify Radionuclide

Immediate call to Ohio Department of Health

- > 50 mrem/hr outside of vehicle or
- > 2 mrem/hr in occupied areas of vehicle



Evaluate for Disposition

Reject Load

U.S. DOT Exemption from ODH

- Known Address
- < 50 mrem/hr outside of vehicle
- < 2 mrem/hr in occupied areas of vehicle
- Not unloaded

Rejected Load Returned to Shipper

Disposition of Loads Not Rejected at the Gate

Residential waste contaminated with a short half-lived radiopharmaceutical from a released medical patient



Radioactive material should be segregated and held for decay-in-storage for 10 half-lives, resurveyed and if background, disposed of as regular trash.

Lost or improperly disposed of licensed radioactive material associated with an academic, research, or industrial use



Immediate call to Ohio Department of Health
Move to remote storage location and secure against unauthorized removal until ODH arrives.

Naturally occurring radioactive material (NORM)



Verify NORM and Contact ODH

Technologically enhanced naturally occurring radioactive Material (TENORM)

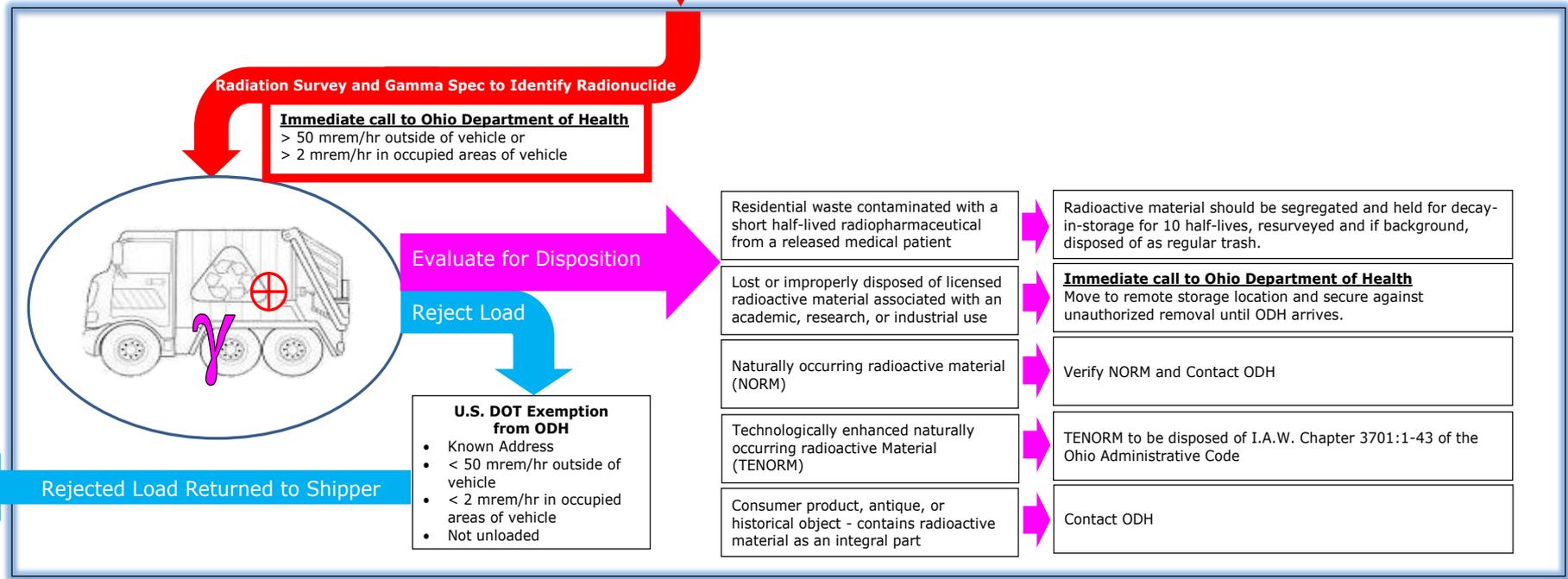
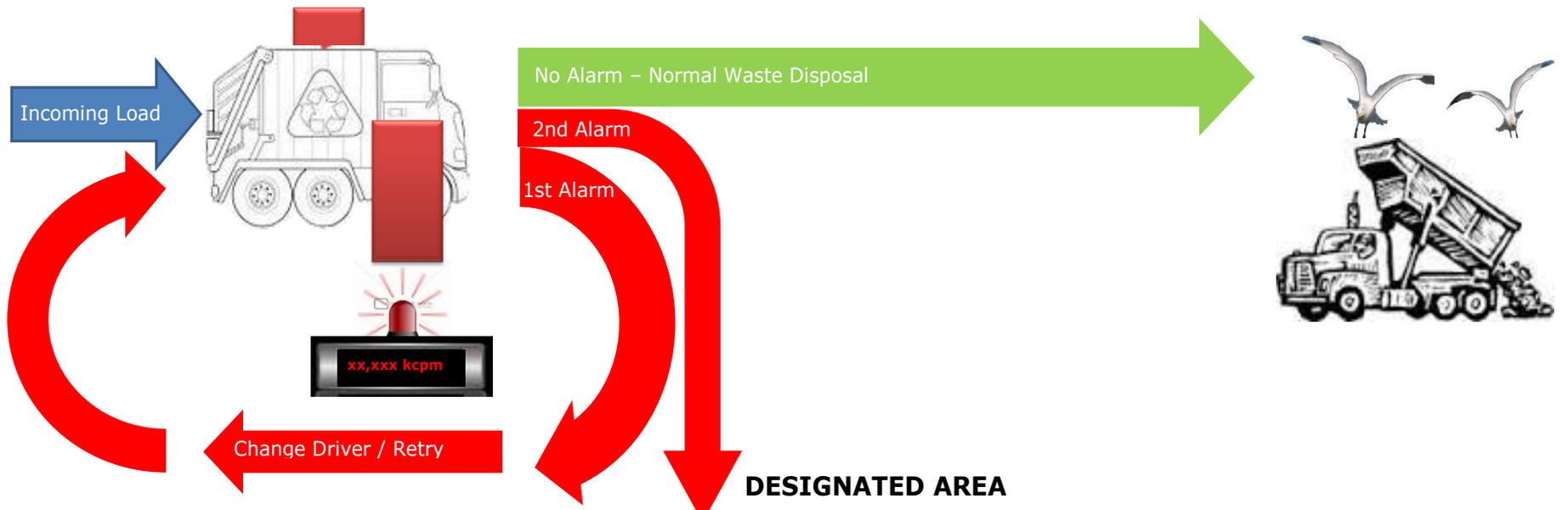


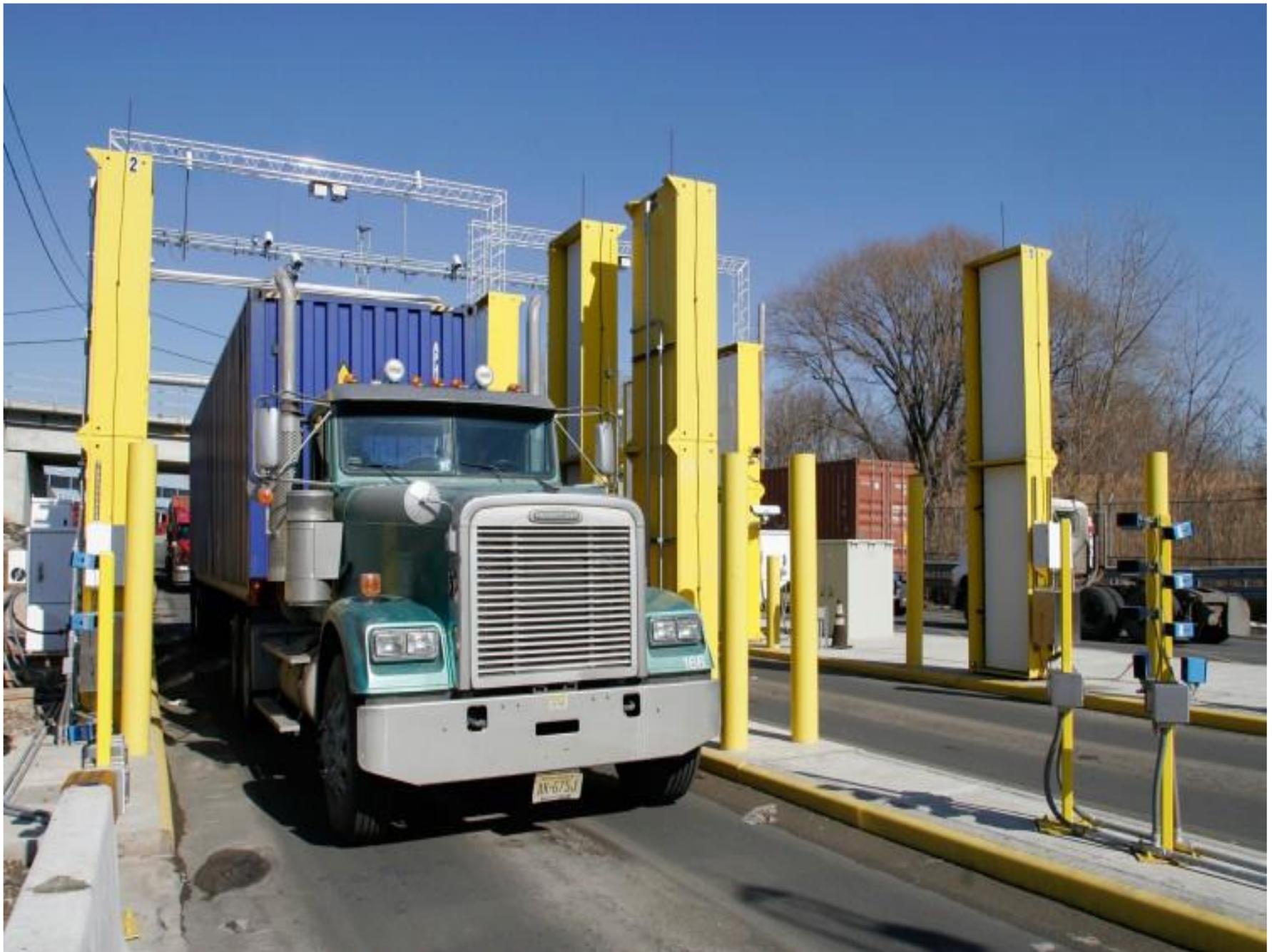
TENORM to be disposed of I.A.W. Chapter 3701:1-43 of the Ohio Administrative Code

Consumer product, antique, or historical object - contains radioactive material as an integral part



Contact ODH





ESO – Next Steps

- Ohio EPA is seeking stakeholder input on the basic concepts, conceptual draft rule language, and ODH-BRP draft guidance document titled. General comments and specific. Deadline for Comments is July 3, 2015.
- After the comment deadline and consideration of stakeholder input, Ohio EPA will prepare a draft version of rules for interested party review and comment.
- Future steps will also include formally filing these new rules with the Joint Committee on Agency Rule Review (JCARR).

Written comments will be accepted
through close of business July 3, 2015.

- Please submit input to –

Michelle Mountjoy

Ohio EPA - DMWM

P.O. Box 1049

Columbus, OH 43216-1049

Michelle.mountjoy@epa.ohio.gov

Questions?

- Please Contact -

Aaron Shear

Solid Waste Compliance & Inspection Support

Ohio EPA – Division of Materials & Waste Management

614-728-5350

Aaron.shear@epa.ohio.gov